AMENDMENTS TO THE CLAIMS

Pursuant to 37 CFR §121(c), the claim listing, including the text of the claims, will serve to replace all prior versions of the claims in the application.

No claim is amended in this Paper.

1. (Previously Presented) A distributed router, comprising:

a plurality of routing nodes each having a plurality of routing protocol processing units, with each routing protocol processing unit processing data in accordance with a respectively corresponding routing protocol; and

a switching module having a plurality of routing protocol processing units communicatively connected with the corresponding routing protocol processing units of each of the routing nodes, with the switching module disposed to share in real time routing information collected by each of the routing nodes with others of the routing nodes.

2. (Previously Presented) A method of managing forwarding information, comprising the steps of:

(1) when new routing information is to be inserted into a routing table in a distributed router in which all routing nodes share a forwarding information made according to an aggregation tree based on the routing table, detecting a position at which an insertion node corresponding to the new routing information is to be inserted into the aggregation tree;

(2) determining presence and absence of an ancestor node of the insertion node at or

below a predetermined maximum aggregation level with respect to the insertion node;

(3) leaving a forwarding table un-updated with information about the insertion node in a presence of the ancestor node, when forwarding information corresponding to the ancestor node is in the forwarding table and both of the insertion node and the ancestor node have been generated from a common source area;

(4) in an absence of the ancestor node, resetting the aggregation level to a reset aggregation level not greater than the maximum aggregation level, and inserting forwarding information corresponding to a delegation node representative of the insertion node at the reset aggregation level in the forwarding table; and

(5) making an insertion of forwarding information by determining the source area of the routing information to be inserted, inserting forwarding information corresponding to the delegation node in the forwarding table when the source area of the routing information is a virtual area, and inserting forwarding information corresponding to the insertion node in the forwarding table when the source area of the routing information is a local area.

3. (Previously Presented) The method of claim 2, comprised of, before making said insertion of forwarding information, and when a delegation node is found to exist at the position of the insertion node while detecting a position at which an insertion node corresponding to the new routing information is to be inserted into the aggregation tree, deleting from the forwarding table forwarding information corresponding to the delegation node.

4. (Previously Presented) The method of claim 2, comprised of:

before making said insertion of forwarding information, when a delegation node is found to exist at the position of the insertion node while detecting said position at which an insertion node corresponding to the new routing information is to be inserted into the aggregation tree, and when a left/right subtree of the delegation node exists,

reinserting nodes of the left/right subtree, and

deleting forwarding information corresponding to the delegation node from the forwarding table.

5. (Previously Presented) The method of claim 2, wherein the step of leaving a forwarding table un-updated with information about the insertion node in a presence of the ancestor node, when forwarding information corresponding to the ancestor node is in the forwarding table and both of the insertion node and the ancestor node have been generated from a common source area, comprises the steps of:

when the ancestor node of the insertion node is found to exist at or below the maximum aggregation level while determining said presence and absence of the ancestor node, searching for a descendant node of the insertion node;

when a descendant node of the insertion node is found to exist, resetting the aggregation level according to a difference between the prefixes of forwarding information corresponding to the insertion node and the descendant node, and when no descendant nodes

of the insertion node are found to exist, resetting the aggregation level according to the aggregation level of the ancestor node of the insertion node;

inserting the forwarding information corresponding to the insertion node in the forwarding table when the reset aggregation level is zero; and

when the reset aggregation level is greater than zero, determining the source area of the inserted routing information, inserting the forwarding information corresponding to the delegation node in the forwarding table when the source area is a virtual area, and inserting the forwarding information corresponding to the insertion node in the forwarding table when the source area is a local area.

6. (Previously Presented) The method of claim 2, comprised of performing said steps of resetting the aggregation level to a reset aggregation level not greater than the maximum aggregation level in an absence of the ancestor node, and inserting a delegation node representative of the insertion node at the reset aggregation level, by:

setting a search level range whether the ancestor node of the insertion node exists within the search level range;

when the ancestor node of the insertion node exists within the search level range, determining whether a descendant node of the deletion node representative of the insertion node exists at the maximum aggregation level;

resetting the aggregation level according to a difference between the prefixes of the insertion and the descendant node of the delegation node when the descendant node of the

delegation node exists at the maximum aggregation level; and

inserting the forwarding information corresponding to the delegation node of the insertion node at the reset aggregation level in the forwarding table.

7. (Previously Presented) A method of managing forwarding information comprising the steps of:

when routing information is to be deleted from a routing table in a distributed router in which all routing nodes share forwarding information assembled according to an aggregation tree based on the routing table, detecting a deletion node corresponding to the routing information to be deleted in the aggregation tree;

when forwarding information corresponding to the deletion node is in a forwarding table, searching for a descendant node of the deletion node at a predetermined maximum aggregation level; and

when a descendant node of the deletion node exists at an aggregation level not greater than a predetermined maximum aggregation level, setting the descendant node as a new source node of a delegation node, and when no descendant nodes exist for the deletion node at an aggregation level not greater than a predetermined maximum aggregation level, deleting the forwarding information corresponding to the deletion node from the forwarding table.

8. (Previously Presented) The method of claim 7, comprising the step of, when the

deletion node is a source node that created a delegation node, changing forwarding information corresponding to the delegation node in conformance with the forwarding information corresponding to the deletion node.

9. (Previously Presented) A distributed architecture router, comprising:

a switching module accommodating a plurality of routing protocol processing units while managing forwarding information within the distributed architecture router, with each routing protocol processing unit processing data in accordance with a respectively corresponding routing protocol; and

a plurality of routing nodes, each of the routing nodes being disposed to service networks within different corresponding source areas comprised of local areas, with each routing node having a plurality of routing protocol processing units communicatively connected with corresponding routing protocol processing units in said switching module to form a source area comprising a virtual area and share in real time collected routing information assembled by a routing table and an aggregation tree derived from said routing table.

10. (Previously Presented) The distributed architecture router of claim 9, comprised of said routing nodes responding to insertion of new routing information into said routing table, by:

identifying in said aggregation tree a position for addition of an insertion node

corresponding to said new routing information;

making a search of said aggregation tree within a maximum aggregation level to identify an ancestor node of said insertion node;

forgoing updating of said forwarding table with forwarding information corresponding to said insertion node when said insertion node and said ancestor node were generated from the same source area and said search identifies said ancestor node;

resetting said maximum aggregation level to a reset aggregation level not less than said maximum aggregation level when said search fails to identify said ancestor node and adding a delegation node representative of said insertion node at said reset aggregation level;

making an identification of said source area of said new routing information;

inserting said forwarding information corresponding to said delegation node when said identification establishes that said source area of said new routing information is a virtual area; and

inserting said forwarding information corresponding to said insertion node when said identification establishes that said source area of said new routing information is a local area.